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*Title:* DOLL'S CLOTHING

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DOLL'S CLOTHING

The present invention relates to a doll's garment, a method for the manufacture thereof and to a set comprising a doll and at least one garment therefor.

5       Traditionally, doll's clothes are stitched from fabric, but this is impracticable for making clothes for dolls smaller than about 8cm in height, due to the difficulty experienced in forming the stitches.

10       Various proposals have therefore been advanced for making articles simulating doll's clothing from alternative materials. For example, US-A-4414774 describes fabricating such articles from plastics materials. The articles are said to be "semi-rigid or flexible" but in practice their degree of rigidity is such that they lack realism and appear  
15       bulky, cannot be fitted or removed in a life-like manner and are restricted to dolls of a particular shape. In addition, once the doll is clothed, its limbs cannot be moved so that the articles are unsuitable for dolls with articulated limbs.

20       In order to overcome at least some of these disadvantages, from a first aspect, the present invention provides a doll's garment made from an elastomeric material or rubber.

25       The material may in particular be selected from poly (vinyl chloride) (PVC), ethylene vinyl acetate copolymer (EVA), any of the polymers sold under the trade mark "Kraton" by Shell Chemical Co (such as (optionally hydrogenated) styrene-butadiene-styrene, styrene-isoprene-styrene, styrene-diene, styrene-isoprene and styrene-  
30       butadiene block copolymers, styrene-ethylene-butylene block copolymer containing mineral oil, branched styrene copolymer, styrene-butadiene rubber, styrene-butadiene triblock rubber, styrene-isoprene-styrene linear block

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polymer, styrene-butadiene radial block copolymer, butadiene-styrene copolymer rubber, or synthetic rubber) and low density polyethylene (LDP). Preferably, the average modulus of elasticity of the material is less than  $1 \text{ MNm}^{-2}$ .  
5 More preferably, the 100% modulus of elasticity, measured at a standard test speed of 500mm/min, is between 120 and 350  $\text{kNm}^{-2}$ , and still more preferably between 240 and 280  $\text{kNm}^{-2}$ . The 300% modulus of elasticity may lie between 440 and 490  $\text{kNm}^{-2}$ . Such values provide a material from which garments  
10 with sufficient realism can be moulded, whilst avoiding increased difficulty in moulding detail and in removal of the moulded garments from the mould which the inventors have found to occur with highly elastic polymers.

Advantageously, the wall thickness of the garment is  
15 from 1 to 3mm.

From a second aspect, the present invention provides a method of manufacturing a doll's garment, comprising moulding an elastomeric material or rubber. Preferably, the garment is injection moulded, but it may alternatively  
20 be dip moulded. The material may in particular be selected from those listed above.

From a third aspect, the invention provides a play set comprising a doll having articulated limbs and at least one garment for the doll, the or each garment being made from  
25 an elastomeric material or rubber.

The doll is preferably articulated at the shoulders and hips and may additionally be articulated at the elbows and/or the knees. The doll may be less than 8cm in height and in a particular embodiment, the doll is approximately  
30 4cm in height.

The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

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Figures 1a to 1g show d ll's garments according to embodiments of the invention;

Figures 2a to 2f show a doll according to an embodiment of the invention in various different positions; and

5        Figures 3a to 3f show the doll of Figures 2a to 2f dressed in the garments of Figures 1a to 1f respectively.

Figures 1a to 1g show various injection-moulded garments for a doll approximately 4cm in height. More specifically, Figure 1a shows a dress, Figure 1b a pair of  
10        dungarees, Figure 1c a gown, Figure 1d a jacket and skirt, Figure 1e a vest and skirt, Figure 1f a jacket and a pair of slacks and Figure 1g a hat and coat. The garments are moulded from elastomeric materials or rubber and are therefore noticeably flexible and elastic, which provides a  
15        high degree of realism as compared with prior art garment-simulating articles. The realism is further enhanced by decorating the garment using paint, varnish, glitter etc. Additionally details such as belts, buttons, and collars are provided by the moulding process. In a particular example,  
20        the garments are moulded from clear Kraton and painted with a paint of which the modulus of elasticity is compatible with that of the Kraton.

Figures 2a to 2f show a three-dimensional doll which is approximately 4cm in height. The doll is assembled from  
25        injection-moulded plastics components and is articulated at the shoulders, hips and knees.

Figures 3a to 3f show the doll of Figures 2a to 2f after fitting of the garments shown in Figures 1a to 1f respectively. Due to their elasticity, the garments can b  
30        fitted in a life-like way, i.e., jackets are donned "arms first" and dresses, trousers and skirts are stepped into. However, upper garments may more easily be donned over the feet due to the diameter of the doll's head and the usual

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positioning of the arms. Once clothed, the doll's limbs can still be moved. The garments are easily interchanged, even by younger children. One garment can be donned over another, e.g. a jacket over a dress.

5        Whilst particular embodiments have been described, the invention is not limited thereto. For example, dolls according to the invention can comprise male figures or figurines and non-human figures as well as female dolls. The garments can include suits, shirts, coats, shorts,  
10    cloaks, capes, uniforms, hats, shoes, helmets, armour and scarfs. In addition, the term "garment" as used in this specification should be understood to include any flexible article which can be fitted to the external surface of a  
15    doll, including second skins, outfits resembling other animals or creatures and moulded surfaces resembling rock, flames, bones or the like.

Whilst the invention is particularly apt for miniature dolls, it is applicable to dolls of any shape and size.

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CLAIMS

1. A doll's garment made from an elastomeric material or rubber.
2. A doll's garment according to claim 1, made from  
5 a material selected from poly (vinyl chloride), ethylene vinyl acetate copolymer, any of the polymers sold under the trade mark "Kraton", and low density polyethylene.
3. A doll's garment according to claim 1 or 2, wherein the average modulus of elasticity of the material is  
10 less than  $1\text{MNm}^{-2}$ .
4. A doll's garment according to claim 3, wherein the 100% modulus of elasticity of the material is between 120 and  $350\text{ kNm}^{-2}$ .
5. A doll's garment according to claim 4, wherein the  
15 100% modulus of elasticity is between 240 and  $280\text{ kNm}^{-2}$ .
6. A doll's garment according to claim 3, 4 or 5, wherein the 300% modulus of elasticity of the material is between 440 and  $490\text{ kNm}^{-2}$ .
7. A doll's garment according to any proceeding claim  
20 which has been decorated with paint or varnish.
8. A doll's garment according to any proceeding claim, comprising at least one integrally moulded detail such as a belt, button or collar.
9. A doll's garment substantially as described herein  
25 with reference to any one of Figures 1a to 1g of the accompanying drawings.
10. A method of manufacturing a doll's garment according to any preceding claim, comprising moulding the

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garment from an elastomeric material or rubber.

11. A method according to claim 10, comprising injection moulding the garment.

12. A set comprising a doll having articulated limbs and at least one garment therefor according to any one of claims 1 to 9.

13. A set according to claim 12, wherein the doll is articulated at the shoulders and hips.

14. A set according to claim 13, wherein the doll is additionally articulated at the elbows and/or knees.

15. A set according to claim 12, 13 or 14 wherein the doll is less than 8 cm in height.

16. A set according to claim 15 wherein the doll is approximately 4 cm in height.

17. A set comprising a doll and at least one garment therefor, substantially as described herein with reference to the accompanying drawings.

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**ABSTRACT**  
**DOLL'S CLOTHING**

A doll's garment is moulded from an elastomeric material or rubber, to give greater realism. A set  
5 comprising a miniature doll with articulated limbs and at least one garment therefor is also provided.

(Figs 3a-3f)

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Fig. 1a



Fig. 1b



Fig. 1c

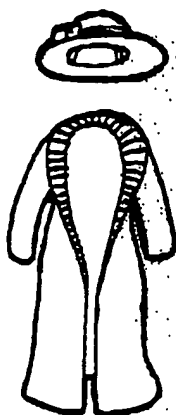


Fig. 1g

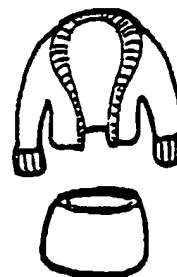


Fig. 1d

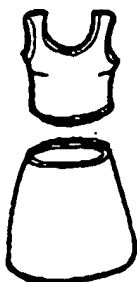


Fig. 1e



Fig. 1f

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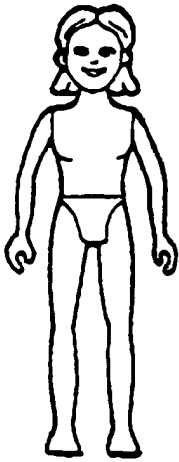


Fig. 2a

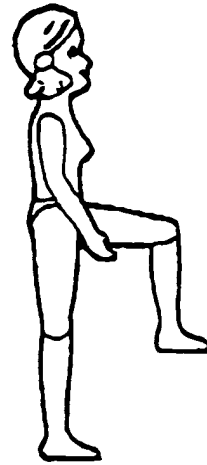


Fig. 2b



Fig. 2c

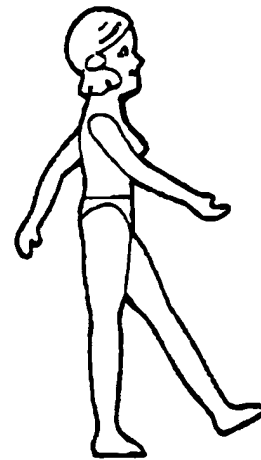


Fig. 2d

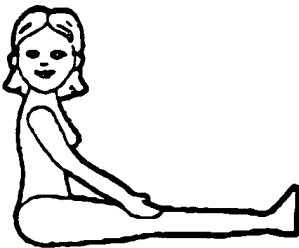


Fig. 2e

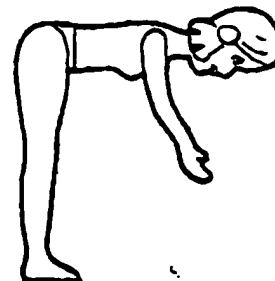


Fig. 2f

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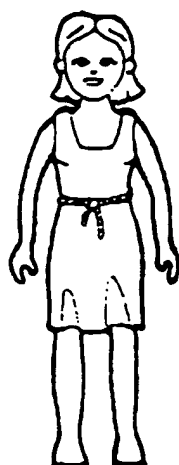


Fig. 3a

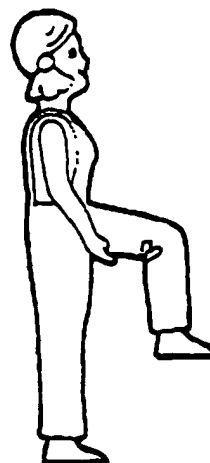


Fig. 3b



Fig. 3c



Fig. 3d



Fig. 3e

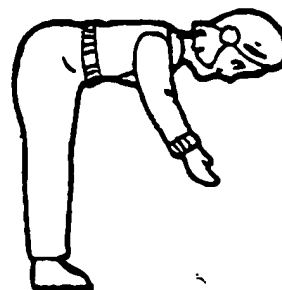


Fig. 3f